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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,382	03/30/2001	William Gordon Hooper III	10992799-1	7395

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EXAMINER

LY, ANH VU H

ART UNIT	PAPER NUMBER
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2667

DATE MAILED: 08/19/2004

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,382

Applicant(s)

HOOPER, WILLIAM GORDON

Examiner

Anh-Vu H Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-15 and 17-19 is/are rejected.
- 7) ☒ Claim(s) 7 and 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3, 5-6, 8-9, 11-12, 14-15, 17, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Black et al (US Pub 2003/0198251 A1). Hereinafter, referred to as Black.

With respect to claims 1 and 9, Black discloses in Fig. 1, a FCAL switched architecture comprising FCAL switch 10 (intra-loop router) coupled to four FCAL networks 12, 14, 16, and 18. Herein, more than two FCAL networks (network segments) are presented and any of the FCAL networks can be considered as main network (main segment) or side network (side network) (an intra-loop router configured to be coupled between a first segment and a second segment of the fibre channel arbitrated loop). Black discloses in Fig. 3, the switch comprises switch control circuits 36, 38, 40, and 42 (router controllers) for receiving and transmitting data in FCAL networks 12, 14, 16, and 18 (a router controller configured to be operatively coupled with a receive lead and transmit lead of the first segment and with a receive lead and a transmit lead of the second segment). Black discloses in Fig. 4, the switch comprises crossbar switch 100 (a processing system coupled with the router controller and configured to cause fibre channel frames received by the router controller to be retransmitted by the router controller onto a

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selected one of the first and second segments), protocol bus 121, routing table 127, and scoreboard 125.

With respect to claims 2 and 11, Black discloses in Fig. 3, the switch comprises switch control circuits 36, 38, 40, and 42 for receiving and transmitting data in FCAL networks 12, 14, 16, and 18. Herein, the switch control circuits comprise circuit interfaces for interfacing with FCAL networks (router controller includes two fibre channel interface controllers configured to be respectively coupled with the first and second segments).

With respect to claims 3 and 12, Black discloses in Fig. 4, the switch comprises a routing table 127 which includes all devices and ports identification information for routing data between devices N1-N21 (processing system is configured to maintain first segment identifiers which identify devices connected to the first segment).

With respect to claims 5 and 14, Black discloses in page 7, 70th paragraph, that each node is assigned an address from one of the 127 possible FCAL addresses (first segment device identifiers include arbitrated loop physical addresses of the devices connected to the first segment).

With respect to claims 6, 8, 15, and 17, Black discloses in Fig. 4, the switch comprises the routing table for identifying devices attached to different FCAL networks (Fig. 1) and how to reach the intended node. Therefore, each node in each different network has the capability to

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reach any other node in any network (processing system is configured to correlate first segment device identifiers with second segment logical identifiers, to make the devices connected to first segment logically accessible from second segment).

With respect to claim 18, Black discloses in Fig. 2, network 24 coupled with network 14 via FCAL bridge 26 (the bridge is considered as second intra-loop router by examiner).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Chin et al (US Patent No. 6,000,020).

With respect to claim 19, Chin discloses in Fig. 1, a FCAL system comprises loop segments 10 and 26 (segment pair) (segmenting the fibre channel arbitrated loop into plurality of segments, including a segment pair). Each loop segment includes a number of devices such as devices 12, 14, 16 for loop segment 10 and 30, 32, and 34 for loop segment 26 (connecting at least some of the plurality of fibre channel devices to each segment of the segment pair). Loop segments 10 and 26 are reachable via FCAL bridge 28 (coupling the segments of the segment pair together with an intra-loop router configured to cause fibre channel frames received by the intra-loop router to be retransmitted onto a selected one of the segments of the segment pair). Chin discloses (col. 15, line 53 – col. 16, line 12 and Figs. 3 and 9) that if the source node is

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node 153 and the destination is node 155, all data frames traveling between these two nodes are shunted across local return segment 60B and never reach left half Bridge 161 (channel frame received from segment bypass first segment). However, if the source node is 153 and the destination node is 106, the OPN primitive from node 153 will be forwarded on line 54B from terminal 1 of RX port 100B to terminal 2 of TX port 102A in accordance to the switching rules (selectively forwarding fibre channel frames using the intra-loop router so that fibre channel frames traveling on one of the segments of the segment pair bypass the other segment of the segment pair unless the fibre channel frames targeting ones of the fibre channel devices connected to the other segment of the segment pair).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Black et al (US Pub 2003/0198251 A1) in view of Chin et al (US Patent No. 6,000,020). Hereinafter, referred to as Black and Chin.

With respect to claims 4, 10, and 13, Black discloses in Fig. 1, a FCAL switched architecture comprising FCAL switch 10 coupled to four FCAL networks 12, 14, 16, and 18. Black does not explicitly disclose wherein the intra-loop router is configured to cause a fibre channel frame received from the second segment to bypass the first segment, unless addressing information embedded within such fibre channel frame correlates with at least one of the first

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segment device identifiers. Chin discloses (col. 15, line 53 – col. 16, line 12 and Figs. 3 and 9) that if the source node is node 153 and the destination is node 155, all data frames traveling between these two nodes are shunted across local return segment 60B and never reach left half Bridge 161 (channel frame received from segment bypass first segment). However, if the source node is 153 and the destination node is 106, the OPN primitive from node 153 will be forwarded on line 54B from terminal 1 of RX port 100B to terminal 2 of TX port 102A in accordance to the switching rules (unless addressing information embedded within the channel frame correlates with at least one of the first segment device identifiers). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include the feature of bypass the other segment of the addressing information is not correlated to the other segment in Black's system, as suggested by Chin, to reduce traveling delay.

Allowable Subject Matter

4. Claims 7 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Chan et al (US Patent No. 6,243,386 B1) discloses fibre channel learning bridge, learning half bridge, and protocol.

Nakayama et al (US Pub 2004/0024930 A1) discloses storage subsystem and storage controller.

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Berman (US Patent No. 6,470,007 B1) discloses interconnect system for fiber channel arbitrated loop including private loop devices.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H Ly whose telephone number is 703-306-5675. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 703-305-4378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

avl


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 8/17/07